

Claims

1. A recording apparatus, comprising:

5 a recording control unit configured to input
content data; to compress the content data; to extract a
portion of the content data, which portion of the content
data is to be used as an index entry, based on data type
information obtained during the compression of the
content data; and to record on a recording medium the
10 compressed content data, the portion of the content data,
and recording time information obtained during the
compression of the content data.

2. The recording apparatus as claimed in claim
15 1, wherein the compressed content data, the portion of
the content data, and the recording time information
obtained during the compression of the content data are
recorded in different areas of said recording medium.

20 3. The recording apparatus as claimed in claim
1 or 2, wherein the portion of the content data is
appended to another said portion of the content data,
which another said portion of the content data is
recorded on said recording medium, as the compression of
25 the content data progresses.

4. The recording apparatus as claimed in claim
1, 2, or 3, wherein the portion of the content data is
recorded on a different recording medium than said
5 recording medium.

5. The recording apparatus as claimed in claim
4, wherein the portion of the content data is recorded on
a different recording medium than said recording medium
10 during intervals between recording sessions of the
compressed content data.

6. A reproducing apparatus, comprising:
a reproducing unit configured to reproduce a
15 portion of content data, which portion of the content
data is recorded on a recording medium by the recording
apparatus as claimed in claim 1, 2, 3, 4, or 5; and to
reproduce the content data at fast speed, backward, or
backward at fast speed based on the reproduced portion of
20 the content data.

7. A recording method, comprising the steps of:
inputting content data;
compressing the content data;
25 extracting a portion of the content data, which

portion of the content data is to be used as an index entry, based on data type information obtained during the compression of the content data; and

5 recording on a recording medium the compressed content data, the portion of the content data, and recording time information obtained during the compression of the content data.

8. The recording method as claimed in claim 7,
10 wherein the compressed content data, the portion of the content data, and the recording time information obtained during the compression of the content data are recorded in different areas of said recording medium.

15 9. The recording method as claimed in claim 7 or 8, wherein the portion of the content data is appended to another said portion of the content data, which another said portion of the content data is recorded on said recording medium, as the compression of the content
20 data progresses.

10. The recording method as claimed in claim 7, 8, or 9, wherein the portion of the content data is recorded on a different recording medium than said
25 recording medium.

11. The recording method as claimed in claim 10, wherein the portion of the content data is recorded on a different recording medium than said recording medium during intervals between recording sessions of the compressed content data.

12. A reproducing method, comprising the steps of:

10 reproducing a portion of content data, which portion of the content data is recorded on a recording medium by the recording method as claimed in claim 7, 8, 9, 10, or 11; and

15 reproducing the content data at fast speed, backward, or backward at fast speed based on the reproduced portion of the content data.

13. A computer-readable recording medium having a program embodied therein for causing a computer to input content data; to compress the content data; to extract a portion of the content data, which portion of the content data is to be used as an index entry, based on data type information obtained during the compression of the content data; and to record on a recording medium 25 the compressed content data, the portion of the content

data, and recording time information obtained during the compression of the content data.

14. The computer-readable recording medium
5 having a program embodied therein as claimed in claim 13,
wherein the compressed content data, the portion of the
content data, and the recording time information obtained
during the compression of the content data are recorded
in different areas of said recording medium.

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15. The computer-readable recording medium
having a program embodied therein as claimed in claim 13
or 14, wherein the portion of the content data is
appended to another said portion of the content data,
15 which another said portion of the content data is
recorded on said recording medium, as the compression of
the content data progresses.

16. The computer-readable recording medium
20 having a program embodied therein as claimed in claim 13,
14, or 15, wherein the portion of the content data is
recorded on a different recording medium than said
recording medium.

25 17. The computer-readable recording medium

having a program embodied therein as claimed in claim 16,
wherein the portion of the content data is recorded on a
different recording medium than said recording medium
during intervals between recording sessions of the
5 compressed content data.

18. The computer-readable recording medium
having a program embodied therein as claimed in claim 13,
14, 15, 16, or 17, wherein the program further causes a
10 computer to reproduce a portion of the content data,
which portion of the content data is recorded on said
recording medium; and to reproduce the content data at
fast speed, backward, or backward at fast speed based on
the reproduced portion of the content data.

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19. A recording apparatus, comprising:
a data recording unit configured to
intermittently record content data on a recording medium;
an index-information-and-portion-of-data
20 generating unit configured to generate index information
from the content data and to extract a portion of the
content data, which portion of the content data
corresponds to the index information, while the data
recording unit is recording the content data; and
25 an index-information-and-portion-of-data

recording unit configured to record on said recording medium, during intervals between recording sessions by the data recording unit of the content data, the index information and the portion of the content data
5 generated/extracted by the index-information-and-portion-of-data generating unit.

20. The recording apparatus as claimed in claim 19, wherein the data recording unit is configured to
10 temporarily store the content data to be recorded on said recording medium in a buffer; to read out the content data from the buffer; and to intermittently record the read-out content data on said recording medium.

15 21. The recording apparatus as claimed in claim 19 or 20, wherein

the index-information-and-portion-of-data generating unit is configured to generate index information from the content data, to extract a portion
20 of the content data, which portion of the content data corresponds to the index information, and to store the generated index information and the extracted portion of the content data in a buffer, while the data recording unit is recording the content data; and

25 the index-information-and-portion-of-data

recording unit is configured to read out the index information and the portion of the content data generated/extracted and stored in the buffer by the index-information-and-portion-of-data generating unit,
5 and to record on said recording medium the read-out index information and the read-out portion of the content data, during intervals between recording sessions by the data recording unit of the content data.

10 22. The recording apparatus as claimed in claim 19, 20, or 21, wherein the index information includes recording time information.

 23. The recording apparatus as claimed in claim
15 19, 20, 21, or 22, wherein the index information includes frame number information.

 24. The recording apparatus as claimed in claim
20 19, 20, 21, 22, or 23, wherein the index-information-and-portion-of-data generating unit generates the index information and extracts the portion of the content data while the content data is being compressed.

 25. The recording apparatus as claimed in claim
25 24, wherein the compressed content data, the portion of

the content data, and the recording time information obtained during the compression of the content data are recorded in different areas of said recording medium.

5 26. The recording apparatus as claimed in claim 24 or 25, wherein the portion of the content data is appended to another said portion of the content data, which another said portion of the content data is recorded on said recording medium, as the compression of
10 the content data progresses.

 27. The recording apparatus as claimed in claim 24, 25, or 26, wherein the portion of the content data is recorded on a different recording medium than said
15 recording medium.

 28. The recording apparatus as claimed in claim 27, wherein the portion of the content data is recorded on a different recording medium than said recording
20 medium during intervals between recording sessions of the compressed content data.

 29. A recording method, comprising:
 a data recording step of intermittently
25 recording content data on a recording medium;

an index-information-and-portion-of-data
generating step of generating index information from the
content data and extracting a portion of the content
data, which portion of the content data corresponds to
5 the index information, while the content data are being
recorded in the data recording step; and

an index-information-and-portion-of-data
recording step of recording on said recording medium,
during intervals between recording sessions of the
10 content data in the data recording step, the index
information and the portion of the content data
generated/extracted in the index-information-and-portion-
of-data generating step.

15 30. The recording method as claimed in claim
29, wherein, in the data recording step, the content data
to be recorded on said recording medium are temporarily
stored in a buffer, read out from the buffer, and
intermittently recorded on said recording medium.

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31. The recording method as claimed in claim 29
or 30, wherein

in the index-information-and-portion-of-data
generating step, index information is generated from the
25 content data, a portion of the content data which portion

of the content data corresponds to the index information is extracted from the content data, and the generated index information and the extracted portion of the content data are stored in a buffer, while the content
5 data are being recorded in the content data recording step; and

in the index-information-and-portion-of-data recording step, the index information and the portion of the content data generated/extracted and stored in the
10 buffer in the index-information-and-portion-of-data generating step are read out and recorded on said recording medium during intervals between recording sessions of the content data in the data recording step.

15 32. The recording method as claimed in claim 29, 30, or 31, wherein the index information includes recording time information.

33. The recording apparatus as claimed in claim
20 29, 30, 31, or 32, wherein the index information includes frame number information.

34. The recording method as claimed in claim
25 29, 30, 31, 32, or 33, wherein, in the index-information-and-portion-of-data generating step, the index

information and the portion of the content data are generated while the content data are being compressed.

35. The recording method as claimed in claim
5 34, wherein the compressed content data, the portion of the content data, and the recording time information obtained during the compression of the content data are recorded in different areas of said recording medium.

10 36. The recording method as claimed in claim 34 or 35, wherein the portion of the content data is appended to another said portion of the content data, which another said portion of the content data is recorded on said recording medium, as the compression of
15 the content data progresses.

37. The recording method as claimed in claim 34, 35, or 36, wherein the portion of the content data is recorded on a different recording medium than said
20 recording medium.

38. The recording method as claimed in claim 37, wherein the portion of the content data is recorded on a different recording medium than said recording
25 medium during intervals between recording sessions of the

compressed content data.

39. A computer-readable recording medium having a program embodied therein, said program comprising:

5 a data recording code unit configured to intermittently record content data on a recording medium;
 an index-information-and-portion-of-data generating code unit configured to generate index information from the content data and to extract a
10 portion of the content data, which portion of the content data corresponds to the index information, while the data recording code unit is recording the content data; and
 an index-information-and-portion-of-data recording code unit configured to record on said
15 recording medium, during intervals between recording sessions by the data recording code unit of the content data, the index information and the portion of the content data generated/extracted by the index-information-and-portion-of-data generating code unit.

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40. The computer-readable recording medium having a program embodied therein as claimed in claim 39, wherein the data recording code unit is configured to temporarily store the content data to be recorded on said
25 recording medium in a buffer; to read out the content

data from the buffer; and to intermittently record the read-out content data on said recording medium.

41. The computer-readable recording medium
5 having a program embodied therein as claimed in claim 39 or 40, wherein

the index-information-and-portion-of-data
generating code unit is configured to generate index
information from the content data, to extract a portion
10 of the content data, which portion of the content data corresponds to the index information, and to store the generated index information and the extracted portion of the content data in a buffer, while the data recording code unit is recording the content data; and

15 the index-information-and-portion-of-data recording code unit is configured to read out the index information and the portion of the content data generated/extracted and stored in the buffer by the index-information-and-portion-of-data generating code
20 unit, and to record on said recording medium the read-out index information and the read-out portion of the content data, during intervals between recording sessions by the data recording code unit of the content data.

25 42. The computer-readable recording medium

having a program embodied therein as claimed in claim 39, 40, or 41, wherein the index information includes recording time information.

5 43. The computer-readable recording medium having a program embodied therein as claimed in claim 39, 40, 41, or 42, wherein the index information includes frame number information.

10 44. The computer-readable recording medium having a program embodied therein as claimed in claim 39, 40, 41, 42, or 43, wherein the index-information-and-portion-of-data generating code unit generates the index information and extracts the portion of the content data
15 while the content data are being compressed.

 45. The computer-readable recording medium having a program embodied therein as claimed in claim 44, wherein the compressed content data, the portion of the
20 content data, and the recording time information obtained during the compression of the content data are recorded in different areas of said recording medium.

 46. The computer-readable recording medium
25 having a program embodied therein as claimed in claim 44

or 45, wherein the portion of the content data is
appended to another said portion of the content data,
which another said portion of the content data is
recorded on said recording medium, as the compression of
5 the content data progresses.

47. The computer-readable recording medium
having a program embodied therein as claimed in claim 44,
45, or 46, wherein the portion of the content data is
10 recorded on a different recording medium than said
recording medium.

48. The computer-readable recording medium
having a program embodied therein as claimed in claim 47,
15 wherein the portion of the content data is recorded on a
different recording medium than said recording medium
during intervals between recording sessions of the
compressed content data.